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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,604	01/18/2002	Masakazu Ogasawara	Q68036	4626

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EXAMINER

DRULA, BRIAN F

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.



## Office Action Summary

Application No.

10/050,604

Applicant(s)

OGASAWARA, MASAKAZU

Examiner

Brian F. Drula

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.



## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3- 6 and 8 are rejected under 35 U.S.C. 103(a) as being obvious over Kikuchi et al. (US/2001/0021162) in view of Summers et al (US/5889750).

In regards to claim 1, Kikuchi et al. discloses an aberration correcting apparatus (figure 2) for correcting aberration in an optical path of an optical system which irradiates a recording medium with a light beam and guides the light beam reflected from the recording medium including an aberration correction element (4) having a plurality of phase adjustment portions (figure 3) each generating an amount of phase change in the light beam, the amount corresponding to an adjustment signal (S1, Vi), a phase adjuster (8a) for supplying the adjustment signal to the respective adjustment portions in response to a phase control signal, a light receiver (7) for receiving the light beam reflected from the recording medium to generate a light-receiving signal, and a controller (8c) for generating a phase control signal based on the light receiving signal.

Kikuchi et al. fails to disclose a first aberration correction element moveable along the optical axis of the light beam, and a driver for positioning the first aberration correction element along the optical axis.



Summers et al. discloses a first aberration correction element (figure 7, 130, 136) movable along the optical axis of the light beam for correcting the aberration of the light beam and a driver (10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the aberration correcting apparatus taught by Kikuchi et al. to include the use of a first aberration correction element and a driver as taught by Summers et al. in order to easily change the spot size of the apparatus when correcting the aberration (column 1, lines 60-63).

In regards to claim 3, Summers et al. further discloses that the first aberration correction element (130, 136) includes a beam sizing lens (figure 7, 130) (column 7, line 7), which is functionally equivalent to a concave lens, and a collimator lens (136) (column 7, line 8), which is functionally equivalent to a convex lens, sequentially arranged from a light source of the light beam, and the driver drives the convex lens (column 7, lines 9-11 and 23-25).

In regards to claim 4, Summers et al. discloses that the first aberration correction element (130, 136) includes a concave lens (figure 7, 130) and a convex lens (136) sequentially arranged from a light source of the light beam, and the driver drives the concave lens (column 7, lines 9-11 and 23-25).

In regards to claim 5, Summers et al. discloses that the first aberration correction element includes a collimating lens (figure 7, 136) for collimating the light emitted from a light source of the light beam.



In regards to claim 6, Summers et al. discloses that the first aberration correction element includes a collimating lens (figure 7, 136) for collimating the light emitted from a light source of the light beam, and a driver (78) for changing the distance between the light source and the collimating lens.

In regards to claim 8, Kikuchi et al. further discloses that the second aberration correction element is a liquid crystal panel (figure 2, 14) (paragraph 0043, lines 1-3).

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. and Summers et al. as applied to claim 1 above, and further in view of Asada et al. (US/6496453).

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Kikuchi et al. discloses a phase adjuster that corrects a residual aberration, but fails to disclose the residual aberration is corrected after correction by a first aberration correction element.

Asada et al. discloses an optical pickup (figure 2) with a phase adjuster (40, 34) that corrects a residual aberration after correction by a first aberration correction element (32) (column 16, lines 24-28)(column 14, lines 63-66).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the aberration correcting apparatus as taught by Kikuchi et al. to include the correction of a residual aberration after correction by the first aberration correction element as taught by Asada et al. in order to maximize the transmission efficiency of the optical system (column 3, lines 4-5).



4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. and Summers et al. as applied to claim 1 above, and further in view of Kim et al. (US/6034935).

Kikuchi et al. further discloses an object lens (5) for focusing on the recording medium, but fails to disclose that the second aberration correction element is fixed to the objective lens.

Kim et al. discloses an optical pickup apparatus including an objective lens (figure 4, 25) and a liquid crystal numerical aperture control unit (44), which is functionally equivalent to the second aberration correction element, and is fixed together with the objective lens in a mover (25a).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the aberration correcting apparatus as taught by Kikuchi et al. to have the second aberration correction element fixed to the objective lens as taught by Kim et al. in order to achieve a more stable optical system (column 6, lines 34-35).

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamazaki et al (US/6552984) discloses a liquid crystal tilt servo apparatus that used a liquid crystal panel to correct a phase difference of a light beam incident on an optical medium. Furukawa et al. (US/6411576) discloses an aberration




compensation device using a liquid crystal panel as a phase compensation device. Oka et al (US/5726436) discloses an apparatus for compensating coma aberration including a convex lens and a concave lens movable to compensate for a coma aberration.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian F. Drula whose telephone number is (703) 605-1157. The examiner can normally be reached on Mon. - Fri., 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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